presence of the nucleic acid binding protein is detected by detecting the bacteriophage or a component thereof.

28. A synthetic nucleic acid binding protein whose design incorporates a method according to claim 3.

31. Cancel

REMARKS

Multiple dependency has been removed to reduce claim fees.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claim 4 was amended as follows:

4. A method according to [any preceding] claim 3, wherein the or each zinc finger has the general primary structure

(A) X^a C X_{2-4} C X_{2-3} F X^c X X X X L X X H X X X^b H - linker

-1 1 2 3 4 5 6 7 8 9

wherein X (including X^a, X^b and X^c) is any amino acid.

Claim 5 was amended as follows:

5. A method according to claim [5] 4 wherein X^a is $^F/_Y$-X or P- $^F/_Y$-X.

Claim 6 was amended as follows:

6. A method according to claim 4 [or claim 5] wherein X_{2-4} is selected from any one of: S-X, E-X, K-X, T-X, P-X and R-X.

Claim 7 was amended as follows:

7. A method according to[any one of] claim[s] 4 [to 6] wherein X^b is T or I.

Claim 8 was amended as follows:

8. A method according to [any one of] claim[s] 4 [to 7] wherein X_{2-3} is G-K-A, G-K-C, G-K-S, G-K-G, M-R-N or M-R.

Claim 9 was amended as follows:

9. A method according to [any one of] claim[s] 4 [to 8] wherein the linker is T-G-E-K or T-G-E-K-P.

Claim 10 was amended as follows:

10. A method according to [any one of] claim[s] 4 [to 9] wherein position +9 is R or K.

Claim 11 was amended as follows:

11. A method according to [any one of] claim[s] 4 [to 10] wherein positions +1, + 5 and + 8 are not occupied by any one of the hydrophobic amino acids, F, W or Y.

Claim 13 was amended as follows:

13. A method for preparing a nucleic acid binding protein of the Cys2-His2 zinc finger class capable of binding to a target nucleic acid sequence, comprising the steps of:

a) selecting a model zinc finger domain from the group consisting of naturally occurring zinc fingers and consensus zinc fingers; and

b) mutating the finger according to the rules set in [any one of] claim[s 1 to] 3.

Claim 17 was amended as follows:

17. A method according to [any preceding] claim 3 wherein the binding protein comprises two or more zinc finger binding motifs, placed N-terminus to C-terminus.

Claim 19 was amended as follows:

19. A method [according to claim 14 or claim 15, wherein the nucleic acid binding protein is constructed by recombinant nucleic acid technology] of producing a nucleic acid binding protein, the method comprising the steps of:

a) preparing a nucleic acid coding sequence encoding two or more zinc finger binding motifs as defined in [any one of] claim[s] 5 [to 13], placed N-terminus to C-terminus;

b) inserting the nucleic acid sequence into a suitable expression vector; and

c) expressing the nucleic acid sequence in a host organism in order to obtain the nucleic acid binding protein.

Claim 20 was amended as follows:

20. A method according to [any preceding] claim 3 comprising the additional steps of subjecting the nucleic acid binding protein to one or more rounds of randomisation and selection in order to improve the characteristics thereof.

Claim 23 was amended as follows:

23. A method according to [any one of] claim[s] 20 [to 22] wherein the nucleic acid binding protein is selectively randomised at any one of positions + 1, + 5, + 8, -1, + 2, + 3 or + 6.

Claim 25 was amended as follows:

25. A method for determining the presence of a target nucleic acid molecule, comprising the steps of:

a) preparing a nucleic acid binding protein by the method of [any preceding] claim 3 which is specific for the target nucleic acid molecule;

b) exposing a test system comprising the target nucleic acid molecule to the nucleic acid binding protein under conditions which promote binding, and removing any nucleic acid binding protein which remains unbound;

c) detecting the presence of the nucleic acid binding protein in the test system.

Claim 27 was amended as follows:

27. A method according to claim 25 [or claim 26] wherein the nucleic acid binding protein, in use, is displayed on the surface of a filamentous bacteriophage and the presence of the nucleic acid binding protein is detected by detecting the bacteriophage or a component thereof.

Claim 28 was amended as follows:

28. A synthetic nucleic acid binding protein whose design incorporates a method according to [any one of] claim[s 1 to 24] 3.